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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/616,095	07/08/2003	Makoto Hosokawa	245402006800	1633
25226	7590	03/17/2004		EXAMINER
MORRISON & FOERSTER LLP 755 PAGE MILL RD PALO ALTO, CA 94304-1018			HU, SHOUXIANG	
			ART UNIT	PAPER NUMBER
			2811	

DATE MAILED: 03/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/616,095	HOSOKAWA ET AL.
	<b>Examiner</b>	<b>Art Unit</b>
	Shouxiang Hu	2811

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) Responsive to communication(s) filed on 08 July 2003.
- 2a) This action is FINAL.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) Claim(s) 1-10 is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-10 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>7/8/03</u> .	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____

## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. Form PTO-1449 included in the information disclosure statement filed on 07/08/03 is found to have only one sheet, although it is numbered as: Sheet 1 of 2. Clarification on this matter is required.

### ***Claim Objections***

2. Claims 6-9 are objected to because of the following informalities and/or defects:  
  
The term of "with a layer identical" recited in these claims does not adequately reflect the subject matter of the instant invention that the protect film includes a first (or second, or third) protection layer, which and the first (or second, or third) insulating film are formed with different portions of a same layer, instead of being identical to each other.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:  
  
The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.
4. Claim 4 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not

described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 4 recites that the protection film includes a polyimide-based resin; but the disclosure lacks an adequate description regarding how such resin material is formed as the protection film (instead of for the molding insulating film), given the fact that much of the protection film (such as layer 7 and 12) requires certain strength, stability and patterning capability. Furthermore, since the molding insulating film can also be formed of a resin material, it is not clear how to define the boundary between the two resin films.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-6 and 10, insofar as being in compliance with 35 U.S.C. 112 and as being best understood in view of the claim objections above, are rejected under 35 U.S.C. 102(b) as being anticipated by JP'604 (JP 9-153604).

JP'604 discloses a semiconductor/optical device (Figs. 1 and 2; also see the English abstract and the machine translation for reference), comprising: a light-receiving element (10) having a light-receiving face formed on a main surface of a semiconductor

substrate (1); an antireflection coating (7); a protection film (17; SiO<sub>2</sub>); and a mold material (18; a resin) directly covering the protection film (17).

Regarding claim 2, the difference in index of refraction of the SiO<sub>2</sub> protection film and the mold material in JP'604 is no larger than 0.3 (see Section 0016]).

Regarding claim 4, insofar as being in compliance with 35 U.S.C. 112, at least the bottom portion of the resin layer 18 in JP'604 can be regarded as a polyimide-based resin protection film, as it naturally protects the antireflection coating against outside moistures.

Regarding claims 5 and 6, the device of JP'604 further comprise a signal processing circuit portion (20), wherein a first insulating film covering the signal processing circuit portion and the protection film (17) are formed of different portions of a same SiO<sub>2</sub> layer (17).

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 7-9, as being best understood in view of the claim objections above, are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art ("AAPA") in view of JP'604 and/or Ohkubo (US 6,635,912).

AAPA disclose a semiconductor/optical device (Fig. 5), including the first, second and third interlayer insulating films (120, 113 and 118, respectively), which is readable as the claimed instant invention, except that these insulating films in AAPA do not extend to also cover the photodiode window region.

However, one of ordinary skill in the art would readily recognize that the extension of such interlayer insulating films is desirable for simplifying the process and adding further protection to the photodiode region, as evidenced in JP'604 (see the interlayer insulating film 17 in Figs. 1 and 2) and Ohkubo (see the interlayer insulating films 72 and 74 in Fig. 1).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the device of AAPA with two or more of the interlayer insulting films being extended to also cover the photodiode region, per the teaching of JP'604 and/or Ohkubo, so that a device with further protection to the photodiode therein would be obtained with a simplified process.

### ***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Reference B is cited as being related to a structure including a photodetector with an antireflection coating.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shouxiang Hu whose telephone number is 571-272-

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1654. The examiner can normally be reached on Monday through Thursday, 7:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie C. Lee can be reached on 571-272-1732. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SH

March 4, 2004

